

Online games e-infrastructure: An open, expandable platform to support your game success

Highlights

- ***Get to market faster and reduce development costs while ensuring delivery of a high quality product***
- ***Launch your online presence cost-effectively and scale up quickly as your game success grows***
- ***Increase revenue per gamer by offering a variety of services, such as personalized portals, chat and game-related commerce***
- ***Provide cost-effective, high-quality service to your game players by deploying integrated, end-to-end service delivery management***
- ***Take advantage of IBM's grid technology leadership to optimize performance across server resources***

A flexible approach to growth

Flexibility is vital in a changing environment. And few environments change as rapidly as those of the online games provider. No matter what games genre the online provider is bringing to the market, it is essential that they have a flexible, scalable and extensible approach.

IBM understands the varying requirements of online games providers and recognizes that a generic all-in-one platform is not practical. Therefore, IBM system architects have designed a specific architecture for online games providers. It is built around 'seven zones' and offers the flexibility to respond to a constantly evolving environment:

- *LobbyZone – the first entry point into the games provider's site*
- *CommunityZone – all gamer-accessible services and information outside the game itself*
- *GameZone – servers and infrastructure to support the game*
- *StorageZone – storage management of all user data in a multi-platform environment*
- *InfrastructureZone – systems management for the complete infrastructure*
- *Back-OfficeZone – all business-related systems*
- *DevelopmentZone – all the systems and tools to develop and test the game*

From the Game Zone, where IBM provides outstanding hardware and tools to manage the server farm and optimize operational costs, to the Community and Back-Office Zones, where we bring decades of skills in building similar e-infrastructures — IBM has products and services to help the online games provider meet their infrastructure needs.

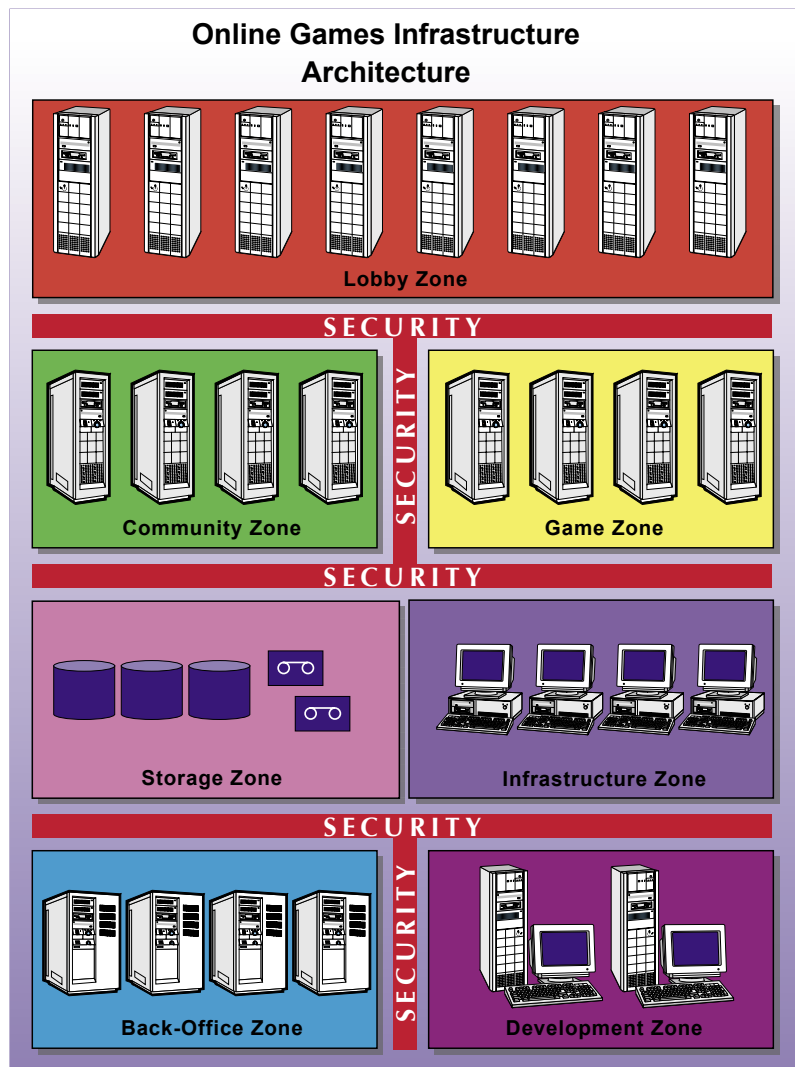
Let's take a look at each zone—and how IBM can support your company's ability to grow and profit through a flexible, robust infrastructure for online games.

The Lobby Zone

The Lobby Zone is the entry point for the potential game-playing customer (the 'gamer') into the online games provider's Web site. Here, the new gamer is allowed to register or an existing gamer will have authorization and subscription status checked. Gamers may 'hang out' in the lobby and chat with others prior to entering the game or they may use a 'matchmaking' service to locate other players at a similar level with whom to play.

To accommodate the large spikes in demand that occur when users register for a newly released game, IBM has partnered with Akamai to offer an On Demand Registration Service. This new service allows game companies to maintain application performance without building expensive infrastructure.

Depending on the game device being used—PC, game console such as Gameboy or PlayStation 2, personal digital assistant (PDA), cell phone or hybrid device such as the N-Gage—the protocol used and the form factor of the response may need to change. In all cases, the needed functions remain the same.



The Lobby Zone also contains servers that provide load balancing, proxy or caching services, significantly reducing Internet bandwidth and increasing the site responsiveness. Here, appliance-style servers such as IBM BladeServer are often used, due to their cost-effective and easy scalability. IBM Global Services, with its deeply skilled Networking Services consultants, can design and implement appropriate configurations for this zone to balance performance and accessibility with security, availability and low cost of operation.

The Game Zone

Here is where the main event happens—the game itself. Stable and highly available systems are needed to support the game that everyone has worked so hard to make challenging and seductive. Responsiveness, combined with the ability to quickly move resources as needed, serves to keep the gamers engaged. Fast, reliable servers and optimized operations make the

difference. IBM's pioneering work in grid computing has resulted in the OptimalGrid technology that enables game hosters to automatically move player populations between servers in a distributed game world to ensure consistent performance. This zone should be securely protected from interference from other ancillary services—while providing in-game access to them as needed.

The Community Zone

Non-game content, commerce, self-service and ancillary services provided by the online games provider is based in the Community Zone. Community has been shown to be key to keeping existing gamers interested, and to increasing the revenue per gamer. By providing a variety of services, such as access to information, chat, game-related commerce, spontaneous team-building or guild self-management tools such as personalized portals and guild calendars, online games providers allow each gamer to feel part of the game even while not playing. Self-service customer care, backed by human self-service when self-help has failed, is also part of the community-enhancing services to be provided here.

From WebSphere® Commerce Server and DB2® Content Manager to Lotus® Collaboration Tools, IBM can offer a wide array of award-winning middleware products to support online game companies' revenue-enhancing initiatives. And now IBM's Business Integration for Games (BIG) technology can allow community services to be integrated into the games themselves, providing even more revenue opportunities.

This wide range of services, with needs that continually become more sophisticated over time, must support multiple points of integration and multiple points of interaction. Support for open standards and extensible programming models is key to flexible additions or upgrades of these community-building capabilities.

The Storage Zone

For companies with large data or database requirements, a separate Storage Zone is an emerging best practice. This centralization of storage into a separate zone provides for easier expansion, monitoring, backup and recovery of data resources. For those games providers for whom large amounts of persistent data is a requirement, this approach may simplify operations and ensure higher availability. IBM Network Attached Storage, FASiT Storage Servers and Linear Tape Open products can provide for easier, cost-effective expansion, monitoring, backup and recovery of data resources.

The Infrastructure Zone

The e-infrastructure is managed from the Infrastructure Zone. Tasks such as monitoring, optimizing performance across the server farm, upgrading servers with required security patches, and so on, are all managed from this zone. With Tivoli® software, it is possible to deploy integrated, end-to-end service delivery management across all of the zones and the separating security appliances. This allows the effective management and delivery of high quality, cost-effective game services to the game-playing customers. Recent additions to the Tivoli suite provide the ability to effectively and non-disruptively move resources, in an orchestrated fashion, from one part of the infrastructure to another.

The Back-Office Zone

Depending on the evolution of the games provider's business, there may be a separate Back-Office Zone. This is where the traditional business applications required to support any business—accounting, payroll, etc.—operate. This zone should be securely separated from gamer-accessible, money-generating and community-building zones.

The Development Zone

The Development Zone is where the key functions of game design and testing occur. IBM's wide range of high performance, Intel-based **@server** servers and IntelliStation workstations running either Windows or Linux and the extensive portfolio of 3D graphics, animation, modeling and rendering applications offer an affordable infrastructure for game design, world building and mechanics. IBM OptimalGrid development tools can also be used to scale and distribute the game without constraining the design.

In addition to developer workstations, code and graphics repositories and testing workstations, there may be a test-bed similar in structure to the Game Zone, used to test new versions of game content prior to moving it into the live site.

Ensuring that the initial game launch and next revisions of game content are consistent in stability and quality can dramatically reduce the churn of dissatisfied players and reduce the impact on customer service. IBM Rational Tool Suite can help game developers ensure this quality while reducing costs by limiting rework due to better configuration management and lowering test costs by providing automated regression testing.

As the game industry matures and more outsourcing occurs, requirements management and communication between teams during initial game design and follow-on releases becomes more important.

An expandable platform for your game successes

The e-infrastructure architecture enables online games providers to launch their online presence with a comparatively small investment in hardware and software while offering the ability to scale up quickly by adding more functions, more services and more servers as the game's success grows.

IBM Products for Online Game Providers

- *IBM @server systems*
- *IntelliStation® Zpro and Epro Workstations*
- *IBM Network Attached Storage, FASiT Storage Servers and Ultrium Linear Tape Open*
- *General Parallel File System (GPFS)*
- *Tivoli Storage Manager and Tivoli Orchestrator*
- *WebSphere Application Server*
- *WebSphere Commerce Suite and WebSphere Digital Media Enabler*
- *WebSphere Portal Server*
- *WebSphere Everyplace® Device Manager*
- *Rational Tool Suite*
- *Lotus QuickPlace® and Lotus Sametime®*
- *OptimalGrid/GameGrid*
- *Business Integration for Online Games (BIG)*
- *IBM Global Services On Demand Services*
- *IBM Global Services Help Desk*
- *IBM Networking and Integration Services*

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White Plains, NY 10604
U.S.A.

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